

Notice of Allowability

Application No.

10/501,219

Examiner

HUNG T. NGUYEN

Applicant(s)

KIMURA ET AL.

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/9/2007.
2. ☒ The allowed claim(s) is/are 1-58.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-58 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

There is no prior art that shows the claimed occupant determination apparatus and an occupant determination method accurately determine a size of an occupant, with a simple configuration where a plurality of electrodes are arranged on one layer, and eliminate errors due to the capacitance between an occupant and surrounding car-body metal parts or the like, and thus suppress erroneous determination. The apparatus includes a sensor having a plurality of seat section electrodes arranged on a sitting section, and a determination section. The determination section includes an oscillator, a capacitance detecting section which detects the current flowing through a seat section electrode in order to detect the capacitance, a switching circuit which switches the connection of the capacitance detecting section to the seat section electrode, and a controlling section which outputs a switch control signal on claims 1, 13 & 31,

furthermore, on claim 6, recites a sensor section having a plurality of back section electrodes arranged on a backrest section of a seat having a seating section on which an occupant sits and the backrest section; and a determination section which detects each capacitance formed between the back section electrodes by using a predetermined first signal for capacitance

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measurement, in order to determine a size of the occupant, wherein the determination section comprises: an electric field generating device which outputs the first signal; a capacitance measuring device which detects each capacitance between the back section electrodes based on a current flowing through each of the back section electrodes;

a switching device which sequentially switches a connection of the capacitance measuring device to the plurality of the back section electrodes based on a switch control signal; and

a controlling device which outputs the switch control signal, and the controlling device comprises: a reference value storage device which stores a predetermined reference curve which is preset so that a capacitance for each position of the backrest section has an extreme value at a predetermined position;

a calculating device which determines the size of the occupant based on the reference curve and a capacitance distribution graph which is generated based on measurement capacitance of each of the back section electrodes determined by respective detection capacitances detected by the capacitance measuring device and the position in the backrest section of each of the back section electrodes;

a switch signal generating device which outputs the switch control signal, and

finally, on claim 35 teaches occupant determination method for an occupant determination apparatus comprising a sensor section having a plurality of back section electrodes arranged on a backrest section of a seat having a seating section on which an occupant sits and the backrest section; and a determination section which detects

each capacitance formed between the back section electrodes by using a predetermined first signal for capacitance measurement, in order to determine a size of the occupant, and wherein a planar external appearance of the backrest section is approximately quadrilateral, the backrest section is connected to the seating section on a connection side which is one side of the quadrilateral, and assuming that two directions mutually orthogonal in the plane of the backrest section are an x-direction and a Z-direction and a direction of the second connection side is the x-direction, at least one of the back section electrodes is arranged on a straight line parallel to the x-direction in the sensor section, and a plurality of arrays of the back section electrodes are provided mutually separate in the Z-direction, the method comprising at least a reference curve setting step for previously preparing a reference curve which is set so that the capacitance for each position in the Z-direction of the backrest section has an extreme value at a predetermined position h_0 ;

a detecting step for detecting each capacitance between the back section electrodes based on a current flowing through each of the back section electrodes corresponding to the first signal;

a size calculating step for calculating a Z size, which is the size in the Z-direction, from the reference curve and a capacitance distribution graph which is generated based on measurement capacitances determined by respective detection capacitances detected in the detecting step and the position in the Z-direction of each of the back section electrodes; and a determination step for determining the size of the occupant by comparing the Z size and a predetermined standard value.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung T. Nguyen whose telephone number is (571) 272-2982. The examiner can normally be reached on Monday to Friday from 9:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Hofsass, Jeffrey can be reached on (571) 272-2981. The fax phone number for this Group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

**HUNG NGUYEN
PRIMARY EXAMINER**


Examiner: Hung T. Nguyen

Date: April 19, 2007